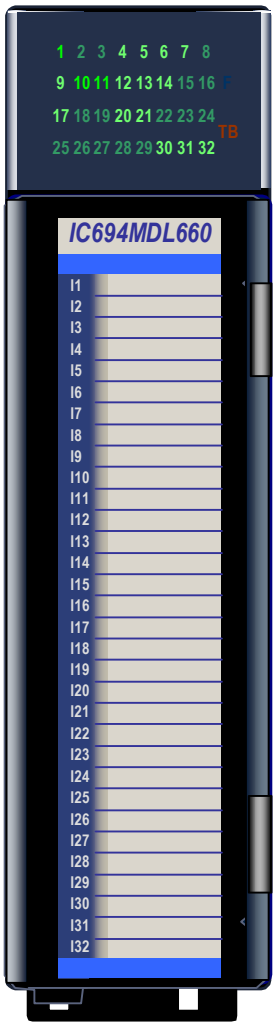
PACSystems™ RX3i

IC694MDL660

GFK-2379
March 2005

24VDC 32-Point Positive/Negative Logic Input Module



The ***24 VDC Positive/Negative Logic Input*** module, IC694MDL660, provides 32 discrete input points. The inputs are positive or negative logic inputs and will operate at levels up to 30V.

The inputs are arranged in four isolated groups of eight; each group has its own common. Isolation is provided between the four groups of inputs, however each group of eight inputs is referenced to the same user common connection.

Module MDL660 provides seven selectable input filter times. Filter times can be set from the programmer using the module's assigned output data references.

This module can be used with either a Box-style (IC694TBB032) or Spring-style (IC694TBS032) front Terminal Block. The Terminal Block is ordered separately.

32 green LEDs indicate the ON/OFF status of points 1 through 32. The red/green TB LED is green when the module's removable terminal block is locked in place. It is red when the terminal block is not locked. The module also sends an *Addition of Terminal Block* or *Loss of Terminal Block* message to the RX3i CPU to report the terminal block status.

The blue bands on the label show that MDL660 is a low-voltage module.

This module can be installed in any I/O slot in an RX3i system. It must be used with an RX3i CPU (release 2.90 or greater). It cannot be used with a Series 90-30 PLC CPU.

Module MDL660 uses 48 input bits and 16 output bits to exchange point status and filter information with the RX3i CPU.

Release Information

Release History

Release	Comments
IC694MDL660A	Initial Release

Known Restrictions and Open Issues in this Release

1. Problem: If the module has corrupted or missing firmware (its LEDs will be OFF), it may still be scanned by the CPU, and there may be no fault messages to indicate that the module is not operating.

   Recommendation: In critical control applications, do not rely solely on diagnostic fault messaging to provide notification of module inoperability.

2. Problem: Firmware updates may fail before they are completed, leaving the module in a “lights out” condition.

   Recommendation: Cycle power to the module and try the firmware update again.

3. Problem: Rarely, hot insertion/removal of the MDL660A module triggers a Loss/Addition of Terminal Block fault message.

   Recommendation: If the terminal block is present and locked, ignore the Loss/Addition of Terminal Block fault message.

4. Problem: Rarely, after a period of many rapidly-repeated power cycles, the module may go “lights out”.

   Recommendation: Avoid multiple power cycles of periods less than 1 second. Also, avoid relay-switching of power to PLC. (Relays can bounce creating rapid power cycling).

Specifications: IC694MDL660

Rated Voltage	24 volts DC
Input Voltage Range	0 to 30 volts DC
Inputs per Module	32 (four isolated groups of 8 inputs)
Isolation, Field to Backplane (optical)	250 VAC continuous; 1500 VAC for one minute
Isolation, Group to Group	250VAC continuous; 1500 VAC for one minute
Input Current	7.0 mA per point (typical) at rated voltage
Module ID	0x058h
Input Characteristics:	
On–state Voltage	11.5 to 30 VDC
Off–state Voltage	0 to 5 VDC
On–state Current	3.2mA minimum
Off–state Current	1.1mA maximum
Input Filter Times	0.5ms, 1.0ms, 2.0ms, 5ms, 10ms, 50ms and 100ms, selectable per module
On response Time	0.5ms, 1.0ms, 2.0ms, 5.0ms, 10.0ms, 50.0ms & 100.0ms (as per filter setting)
Off response Time	0.5ms, 1.0ms, 2.0ms, 5.0ms, 10.0ms, 50.0ms & 100.0ms (as per filter setting)
Power Consumption	300mA (all inputs on) from 5 volt bus on backplane
Diagnostics	Terminal block presence reported to RX3i CPU

Field Wiring: MDL660

Connections	Terminals	Terminals	Connections
Input 1	1	19	Input 17
Input 2	2	20	Input 18
Input 3	3	21	Input 19
Input 4	4	22	Input 20
Input 5	5	23	Input 21
Input 6	6	24	Input 22
Input 7	7	25	Input 23
Input 8	8	26	Input 24
Common 1 - 8	9	27	Common 17 - 24
Input 9	10	28	Input 25
Input 10	11	29	Input 26
Input 11	12	30	Input 27
Input 12	13	31	Input 28
Input 13	14	32	Input 29
Input 14	15	33	Input 30
Input 15	16	34	Input 31
Input 16	17	35	Input 32
Common 9 - 16	18	36	Common 25 - 32